A Dissertation on

Experimental Modal Analysis of Main Composite Shaft Used in Hydraulic Gear Pump

By

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CAYMET's

CERTIFICATE

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Abstract

In the present work an attempt is made to evaluate the suitability of composite material for the purpose of main shaft used in Hydraulic Gear Pump. For the experimentation FFT analyzer is used to calculate the natural frequencies. A composite main shaft for Gear Pump is designed in Catia and analyzed using ANSYS software respectively for composite. During analysis the three fundamental bending modes are extracted. Finite element models of the main shaft will be generated and analyzed using ANSYS commercial software. Comparison of main shaft with steel material and composite shaft shows that composite shaft gives advantages in terms of strength, weight reduction and also results are expected to show that the main shaft is not running in critical speed. The finite element model agrees well with the FFT results and can serve as a baseline model of the main shaft.